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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/830,899
Filing Date: August 13, 2001
Appellant(s): PAEK ET AL.

Robert L. Maier
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed December 18, 2006 appealing from the Office action mailed July 3, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,079,566	Eleftheriadis et al	6-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-43 are rejected under 35 U.S.C. 102(b) as being anticipate by US Pat No 6,079 issued to Eleftheriadis et al (hereafter Pat '566).

Claims 1, 17 and 33:

Pat '566 discloses:

(a) at least one multimedia information input interface receiving said multimedia information [MPEG-4 file, Fig 4, electronic memory 390, col 7, line 25]

(b) a computer processor coupled to said at least one multimedia information input interface receiving said multimedia information therefrom [Fig 4, CPU 380],

processing said multimedia information by performing object extraction processing to generate multimedia object descriptions from said multimedia information [**col 1, lines 64-67, col 3, lines 30-37** discloses "encodes, stores and retrieves not just

frames but individual segments containing AV objects which are then assembled into a scene according to embedded file information," **abstract** discloses that AV objects can be accessed using index information, **col 5, lines 10-12** discloses Object IDs to uniquely identify AV objects]

processing said generated multimedia object descriptions by object hierarchy processing to generate multimedia object hierarchy descriptions indicative of an organization of said object descriptions [col 3, lines 35-40, tree-structured approach]

wherein at least one description record including said multimedia object descriptions and said multimedia object hierarchy descriptions is generated for content embedded within said multimedia information [file contains a header having streaming information, physical object information and logical object information]

(c) a data storage system, operatively coupled to said processor for storing at least said at least one description record [Fig 4, MPEG-4 player 360, video buffer col 7, lines 40-42]

Claims 2, 18 and 34:

Pat '566 discloses wherein said multimedia information comprises image information, said multimedia object descriptions comprise image object descriptions, and said multimedia object hierarchy descriptions comprise image object hierarchy descriptions. [col 3, lines 35-40, tree-structured approach]

Claims 3 and 19:

Pat '566 discloses (a) image segmentation processing to segment each image in said image information into regions within said image, and (b) feature extraction processing

to generate one or more feature descriptions for one or more of said regions, whereby said generated object descriptions comprise said one or more feature descriptions for one or more of said regions [col 3, lines 20-28]

Claims 4, 20 and 35:

Pat '566 discloses wherein said one or more feature descriptions are selected from the group consisting of text annotations, color, texture, shape size and position [col 30-40]

Claims 5, 21 and 36:

Pat '566 discloses wherein said object hierarchy processing comprises physical object hierarchy organization to generate physical object hierarchy descriptions of said image object descriptions that are based on spatial characteristics of said objects, such that said image object hierarchy descriptions comprise physical descriptions [col 30-40].

Claims 6, 22 and 37:

Pat '566 discloses wherein said object hierarchy processing further comprises logical object hierarchy organization to generate logical object hierarchy descriptions of said image object descriptions that are based on semantic characteristics of said objects, such that said image object hierarchy descriptions comprise physical and logical descriptions [col 2, lines 5-10]

Claims 7 and 23:

Pat '566 discloses image segmentation processing to segment each image in said image information into regions within said image and (b) feature extraction processing to generate object descriptions for one or more of said region, and wherein said physical

hierarchy organization and said logical hierarchy generate hierarchy descriptions of said object descriptions for said one or more of said regions [col 2, lines 5-10]

Claims 8 and 24:

Pat '566 discloses further comprising an encoder receiving said image object hierarchy descriptions and said image object descriptions, and encoding said image object hierarchy descriptions and said image object descriptions into encoded descriptions information, wherein said data storage system is operative to store said encoded description information as said at least one description record [Fig 4, 390]

Claims 9, 25 and 38:

Pat '566 discloses wherein said multimedia information comprises video information, said multimedia object descriptions comprise video object descriptions including both event descriptions and object descriptions, and said multimedia hierarchy descriptions comprise video object hierarchy descriptions including both event hierarchy descriptions and object hierarchy descriptions [col 1, lines 30-40]

Claims 10 and 26:

Pat '566 discloses (a) temporal video segmentation processing to temporally segment said video information into one or more video events or groups of video events and generate event descriptions for said video events, (b) video object extraction processing to segment said one or more video events or groups of video events into one or more regions, and to generate object descriptions for said regions; and (c) feature extraction processing to generate one or more event feature descriptions for said one or more video events or groups of video events, and one or more object feature descriptions for said

one or more regions; wherein said generated video object descriptions include said event feature descriptions and said object descriptions [col 3, lines 30-40]

Claims 11, 27 and 39:

Pat '566 discloses wherein said one or more event feature descriptions are selected from the group consisting of text annotations, shot transition, camera motion, time and key frame, and wherein said one or more object feature descriptions are selected from the group consisting of color, texture, shape, size, position, motion, and time [col 3, lines 27, 28, col 3, lines 30-35]

Claims 12, 28 and 40:

Pat '566 discloses wherein said object hierarchy processing comprises physical event hierarchy organization to generate physical event hierarchy descriptions of said video object descriptions that are based on temporal characteristics of said video objects, such that said video hierarchy descriptions comprise temporal descriptions [col 3, lines 15-45]

Claims 13, 29, 41 and 43:

Pat '566 discloses wherein said object hierarchy processing further comprises logical event hierarchy organization to generate logical event hierarchy descriptions of said video object descriptions that are based on semantic characteristics of said video objects, such that said hierarchy descriptions comprise both temporal and logical descriptions [col 4, lines 1-15]

Claims 14, 30 and 42:

Pat '566 discloses wherein said object hierarchy processing further comprises physical and logical object hierarchy extraction processing, receiving said temporal and logical descriptions and generating object hierarchy descriptions for video objects embedded within said video information, such that said video hierarchy descriptions comprise temporal and logical event and object descriptions [col 3, line 15 through col 4, line 15]

Claims 15 and 31:

Pat '566 discloses (a) temporal video segmentation processing to temporally segment said video information into one or more video events or groups of video events and generate event descriptions for said video events, (b) video object extraction processing to segment said one or more video events or groups of video events into one or more regions, and to generate object descriptions for said regions', and (c) feature extraction processing to generate one or more event feature descriptions for said one or more video events or groups of video events, and one or more object feature descriptions for said one or more regions; wherein said generated video object descriptions include said event feature descriptions and said object descriptions, and wherein said physical event hierarchy organization and said logical event hierarchy organization generate hierarchy descriptions from said event feature descriptions, and wherein said physical object hierarchy organization and said logical object hierarchy organization generate hierarchy descriptions from said object feature descriptions [col 3, line 15 through col 4, line 15]

Claims 16 and 32:

Pat '566 discloses an encoder receiving said video object hierarchy descriptions and said video object descriptions, and encoding said video object hierarchy descriptions

and said video object descriptions into encoded description information, wherein said data storage system is operative to store said encoded description information as said at least one description record [col 3, line 15 through col 4, line 15]

(10) Response to Argument

Appellant Argues:

Appellant states on page 10 that Eleftheriadis does not disclose the claim 1 limitation "processing said multimedia information by performing object extraction processing to generate multimedia object descriptions."

Examiner Responds:

Examiner is not persuaded. Regarding "object description," Appellant does not provide a specific and deliberate definition of same. A common dictionary[1] definition of describe is "to tell or write about." The following disclosure by Eleftheriadis is in line with above definition.

Eleftheriadis discloses in column 1, lines 60-67, the following:

The invention overcoming these and other problems in the art relates to a system, method and associated medium for processing object-based audiovisual information which encodes, stores and retrieves not just overall frames, but individual segments containing AV objects which are then assembled into a scene according to embedded file information. The invention consequently provides very efficient streaming of and random access to component AV objects for even complex scenes.

[1] Webster's New World College Dictionary, Fourth Edition

The above teaching that individual segments containing audio-visual objects can be processed, encoded, stored and retrieved reads on the claim limitation "processing said multimedia information by performing object extraction processing to generate multimedia object descriptions."

Furthermore, Eleftheriadis discloses in column2, lines 30-35 the following:

> The AV (audio-visual) objects making up a scene are separately encoded and stored in file segments, and composition data for composing scenes out of those constituent objects is separately stored and can be randomly accessed and readily edited as well. Moreover the invention is capable of processing MPEG-1, MPEG-2, audio, video and systems data files, along with coded MPEG-4 data with its extended capabilities.

The above teaching that (1) audio-visual objects are separately coded and stored in file segments and (2) constituent objects can be randomly accessed and readily edited (emphasis added) reads on the claim limitation "processing said multimedia information by performing object extraction processing to generate multimedia object descriptions."

Furthermore, Eleftheriadis discloses in column 5, lines 10-13 that object IDs are used to uniquely identify the AV (audio-visual) objects encapsulated in AL PDUs 60, including the BIFS (binary format scene description information). The above teaching that object IDs are used to uniquely identify the AV (audio-visual) objects reads on the claim element "processing said multimedia information by performing object extraction processing to generate multimedia object descriptions."

Still further, Eleftheriadis discloses in column 5, lines 27-30 a one-byte Profile field 460 (Figure 1) containing profile/level descriptions for each AV Object present in the file. The above teaching of a one-byte profile field containing profile/level descriptions for each AV object is proof that Eleftheriadis anticipates the claim limitation "processing said multimedia information by performing object extraction processing to generate multimedia object descriptions."

Appellant Argues:

Appellant states on page 10 that Eleftheriadis does not disclose "processing said generated multimedia object descriptions by object hierarchy processing to generate multimedia object hierarchy descriptions."

Examiner Responds:

Examiner is not persuaded for the following reasons.

It will be productive to interpret above claim limitations with respect to the specification of instant application.

In Brief Description of the Drawings on Page 8, the specification states:

Figs 6a and 6b are illustrative diagrams showing a set of video events and an exemplary hierarchal organization for the exemplary video objects shown in Figure 5.

Page 21, fourth paragraph states:

Nine exemplary video events are shown in Fig. 5, including the entire video sequence 500, a scene where the tiger is stalking the prey 510, a scene where the tiger is chasing its prey 520, a scene where the tiger catches its prey 530 and a

> scene where the tiger is feeding 540. The later scene includes two events, one where the tiger is holding the food 550, and the second where the tiger is feeding the young 560. These video events, which are parallel to image objects may be expressed as a set of events 0, 1, 2, 3, 4, 5, 6 as shown in Fig. 6a with the entire video sequence being event 0, the scene where the tiger is stalking the prey 510 being event 1, the scene where the tiger is chasing its prey being event 2, the scene where the tiger catches its prey 530 being event 4, the scene where the tiger is feeding 540 being event 4[2] the scene where the tiger is hiding the food 550 being event 5, and the scene where the tiger is feeding the young 560 being event 6.

Examiner concludes the following based on the above excerpts from the specification:

(1) The tree structure of Fig. 6b is an hierarchal organization of objects. The hierarchal organization of objects is plain and simply the sequence of video events, i.e., event 0[3] is the entire video sequence followed by events 1, 2, 3, 4 and then events 5 and 6.

(2) There is no difference between, a scene, an event and an image object.

Considering the teachings of the prior art made of record, Eleftheriadis discloses in column 3, lines 30-45:

> Individual components of a scene are **coded as independent objects** (e.g. arbitrarily shaped visual objects, or separately coded sounds). The audiovisual objects are transmitted to a receiving terminal along with scene description information which defines how the objects should be positioned in space and time in order to construct the scene to be presented to the user. The scene description follows a **tree structured approach**, similar to the Virtual Reality modeling Language (VRML) known in the art. The encoding of such scene description

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[2] Examiner notes that there are <u>two</u> (emphasis added) events numbered 4

[3] Examiner is confused by event 0 which is the entire sequence of events 1-6. One of ordinary skill in the art would not understand why the entire sequence must be sent as event 0 and then send the entire sequence a second time but in the second transmittal the sequence is individually numbered.

information is more fully defined in Part 1 of the official ISO MPEG-4 specification (MPEG-4) Systems), known in the art. **BIFS information** is transmitted in its own elementary stream, with its own **time and clock stamp information** to ensure proper coordination of events at the receiving terminal.

The claimed "multimedia object descriptions" are anticipated by "individual components of a scene coded as independent objects" per the above teaching by Eleftheriadis.

Firstly, the claimed "multimedia object hierarchy descriptions" are anticipated by the scene description which follows a tree-structure approach for defining how the objects should be positioned in space and time. Examiner notes per Fig. 6b of the specification of instant application and further as noted above, a tree-structure representation of coded independent objects is the same as the claimed "object hierarchy descriptions."

Secondly, the claimed "multimedia object hierarchy descriptions" are anticipated by BIFS (binary format scene) information, as best examiner is able to ascertain from the specification. Eleftheriadis discloses hierarchal organization such as a tree-structure of events comprising coded independent objects. Event 0 is interpreted as the BIFS information transmitted in its own elementary stream and the sequencing of the events, i.e., such as events 1-6 are interpreted as the time and clock stamp information which ensures proper coordination of events at the receiving terminal.

Examiner has justifiably shown, as best examiner is able to ascertain considering above inconsistencies in the specification that Eleftheriadis

anticipates the claim language "object hierarchy processing to generate multimedia object descriptions."

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Conferees:

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